Remarks

Claims 1-21 were pending. By way of this response, claims 1, 10, 18 and 21 have been amended. Support for the amendments to the claims can be found in the application as originally filed, and care has been taken to avoid adding new matter. Accordingly, claims 1-21 remain pending.

Rejection Under 35 U.S.C. § 102

Claims 1-7 and 18-19 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Suenaga (U.S. Patent No. 6,784,352).

Independent claims 1 and 18 have been amended, as set forth above. Independent claims 1 and 18 indicate that the sensor is positioned in proximity to a tightening bolt of the drum. Applicant traverses the rejection as it relates to the present claims.

As acknowledged in the Office Action, Suenaga does not disclose a drum with any tightening bolts, let alone a sensor positioned in proximity to a tightening bolt. Since Suenaga does not disclose each and every element recited in the present claims, Suenaga does not anticipate the claims, and the rejection has been overcome and withdrawal of the rejection is requested.

In view of the above, Applicant submits that the present claims, and claims 1-7 and 18-19 in particular, are not anticipated by Suenaga under 35 U.S.C. § 102.

Rejections Under 35 U.S.C. § 103

Claim 8 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Suenaga. Claims 9-16 and 20-21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Suenaga in view of Tichy (U.S. Patent No. 5,251,264). Claim 17 has been rejected under 35

U.S.C. § 103(a) as being unpatentable over Suenaga in view of Tichy and further in view of May.

As indicated above, independent claims 1, 10, 18, and 21 have been amended. Applicant submits that the amendments to the independent claims similarly apply to their respective dependent claims. Applicant traverses the rejections as they relate to the present claims.

The present claims specify that the sensor is a moveable or mobile sensor, and that the sensor is positioned in proximity to a tightening bolt of the drum to permit acoustic energy to be received from the drum without substantial interference from other tightening bolts of the drum, and to permit adjustment or tuning of each tightening bolt of the drum to match the tuning of the other tightening bolts or to a single resonant frequency.

Applicant submits that the cited references do not disclose or suggest the presently claimed invention.

For example, Suenaga discloses a system for muting or decreasing the volume of a drumhead or percussion instrument (column 1, lines 15-19; and column 2, lines 7-11). FIG. 1 illustrates a drum body 10 that includes a drumhead 11 sandwiched between an exterior periphery of the drum body and rims 12 under tension (column 3, lines 32-40).

As acknowledged in the Office Action, Suenaga does not disclose a drum which includes tightening bolts or tension bolts (see Office Action, page 6, fourth full paragraph). In addition, Suenaga does not disclose a moveable sensor, as recited in the present claims. Moreover, Suenaga is directed to solving an entirely different and distinct problem that the presently claimed invention. As discussed above, Suenaga is attempting to reduce sound volume of a drum or percussion instrument. The presently claimed invention is directed to a apparatus and method that are effective in tuning a drum. Thus, applicant submits that Suenaga is actually from a non-analogous art from the claimed invention.

Tichy discloses microphones that use lead-zirconate-titanate (PZT) pressure sensing elements (column 1, lines 7-9). The microphones are used in relatively harsh environments, such as environments where the microphone is susceptible to electromagnetic interference, vibration, moisture, corrosive exhaust gases, dirt, and heat (column 1, lines 38-45). The microphone may be coupled to a meter.

May discloses an electroacoustically amplified drum assembly, and a microphone assembly mounted to the drum assembly (column 1, lines 6-8). The microphone is located in the drum body or under the drumhead.

Applicant submits that each of the present claims includes a moveable sensor in proximity to a tightening bolt of the drum and above the drumhead of the drum. As acknowledged in the Office Action, neither Suenaga or Tichy, taken alone or in combination, disclose a drum with tightening bolts. The Office Action points to May for the teaching of tightening bolts on the drum.

Applicant submits the combination of Suenaga, Tichy, and May to not disclose, teach, or suggest the present invention. For example, the microphones disclosed by Suenaga and May are fixed. They are not moveable sensors, as recited in the present claims. To make the microphones mobile would require substantial modification to the devices of Suenaga and May, which modifications are not disclosed or even suggested. In addition, since both Suenaga and May disclose fixed microphones, the references, do not disclose or suggest a sensor that is positioned to receive acoustic energy in proximity to a tightening bolt without substantial interference from other tightening bolts of the drum, as recited in the present claims. Clearly, the microphones disclosed by Suenaga and May are not able to isolate any portion of the drumhead, let alone to do so as recited in the present claims.

Furthermore, May specifically discloses that the microphone is located in the drum body (i.e., below the drumhead). Thus, May **teaches away** from the present invention since the claims recite a sensor located above a drumhead.

Although Tichy discloses a meter coupled to a microphone, Tichy taken alone, or in combination with Suenaga and May, does not discloses a meter that is configured to permit tuning of each tightening bolt of a drum to be matched to the other tightening bolts of the drum or to the same resonant frequency, as recited in the present claims.

In addition, Applicant submits that a person of ordinary skill in the art would not be motivated to combine the teachings of Suenega, Tichy, and May, since the teachings are from non-analogous arts. For example, Suenaga is attempting to disclose a volume reducing system, Tichy is attempting to develop a microphone for harsh environments which are not applicable to the teachings of Suenaga, and May is attempting to improve on the securement of a microphone inside a drumbody.

In view of the above, Applicant submits that the present claims, that is claims 1-21, are unobvious from and patentable over Suenaga, Tichy, and May, taken alone or in any combination under 35 U.S.C. § 103.

Applicant submits that the present claims are in condition for allowance, and respectfully requests the Examiner to pass the above-identified application to issuance at an early date. If a telephone interview would be of assistance in advancing prosecution of the subject application, Applicant's undersigned representative invites the Examiner to telephone him at the number provided below.

Respectfully submitted,

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Kenton R. Mullins
Registration No. 36,331

Stout, Uxa, Buyan & Mullins, LLP
4 Venture, Suite 300
Irvine, California 92618
Telephone: 949-450-1750